



DRILL STEM TEST REPORT

Prepared For: **Hartman Oil Company**

10500 E Berkeley Sq PKWY Ste 100
Wichita, KS 67206

ATTN: Kitt Noah

Calkins #15-1

15-21s-36w Kearny,KS

Start Date: 2014.03.10 @ 23:42:15

End Date: 2014.03.11 @ 07:05:15

Job Ticket #: 55646 DST #: 1

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.03.19 @ 17:05:53



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Hartman Oil Company
 10500 E Berkeley Sq PKWY Ste 100
 Wichita, KS 67206
 ATTN: Kitt Noah

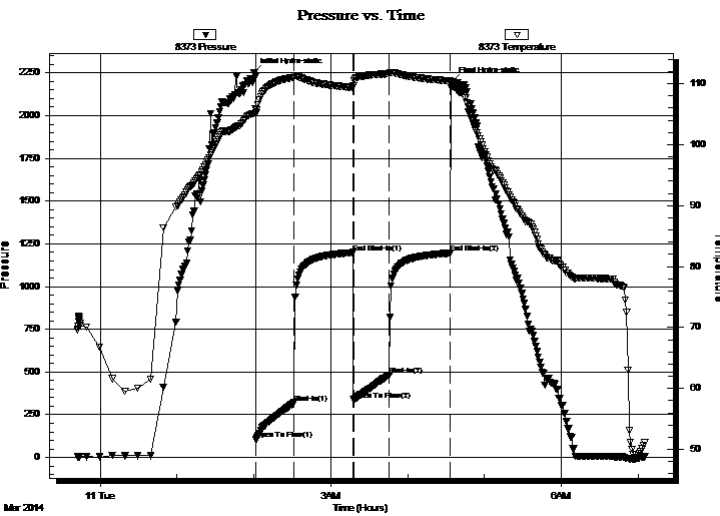
15-21s-36w Kearny,KS
Calkins #15-1
 Job Ticket: 55646 **DST#: 1**
 Test Start: 2014.03.10 @ 23:42:15

GENERAL INFORMATION:

Formation: **Altamont B**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 02:01:45
 Time Test Ended: 07:05:15
 Interval: **4517.00 ft (KB) To 4541.00 ft (KB) (TVD)**
 Total Depth: 4541.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Brandon Turley
 Unit No: 60
 Reference Elevations: 3232.00 ft (KB)
 3222.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 8373 Inside
 Press@RunDepth: 483.39 psig @ 4518.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.03.10 End Date: 2014.03.11 Last Calib.: 2014.03.11
 Start Time: 23:42:20 End Time: 07:05:14 Time On Btm: 2014.03.11 @ 02:00:15
 Time Off Btm: 2014.03.11 @ 04:34:45

TEST COMMENT: IF: BOB in 5 min.
 IS: No return.
 FF: BOB in 8 min.
 FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2253.32	105.03	Initial Hydro-static
2	103.90	105.17	Open To Flow (1)
31	319.69	111.03	Shut-In(1)
77	1198.88	109.38	End Shut-In(1)
78	337.33	109.67	Open To Flow (2)
106	483.39	111.63	Shut-In(2)
153	1195.06	110.43	End Shut-In(2)
155	2200.49	109.69	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
744.00	water 100%w	8.12
217.00	mcw 80%w 20%m	3.04

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Hartman Oil Company

15-21s-36w Kearny,KS

10500 E Berkeley Sq PKWY Ste 100
Wichita, KS 67206

Calkins #15-1

Job Ticket: 55646

DST#: 1

ATTN: Kitt Noah

Test Start: 2014.03.10 @ 23:42:15

Tool Information

Drill Pipe:	Length: 4255.00 ft	Diameter: 3.80 inches	Volume: 59.69 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 254.00 ft	Diameter: 2.25 inches	Volume: 1.25 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 60.94 bbl</u>	Tool Chased 4.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	4517.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	24.00 ft			
Tool Length:	52.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Stubb	1.00			4490.00	
Shut In Tool	5.00			4495.00	
Hydraulic tool	5.00			4500.00	
Jars	5.00			4505.00	
Safety Joint	3.00			4508.00	
Packer	5.00			4513.00	28.00 Bottom Of Top Packer
Packer	4.00			4517.00	
Stubb	1.00			4518.00	
Recorder	0.00	8373	Inside	4518.00	
Recorder	0.00	8356	Outside	4518.00	
Perforations	18.00			4536.00	
Bullnose	5.00			4541.00	24.00 Bottom Packers & Anchor

Total Tool Length: 52.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Hartman Oil Company

15-21s-36w Kearny,KS

10500 E Berkeley Sq PKWY Ste 100
Wichita, KS 67206

Calkins #15-1

Job Ticket: 55646

DST#: 1

ATTN: Kitt Noah

Test Start: 2014.03.10 @ 23:42:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

69000 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3600.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
744.00	water 100%w	8.123
217.00	mcw 80%w 20%m	3.044

Total Length: 961.00 ft Total Volume: 11.167 bbl

Num Fluid Samples: 0

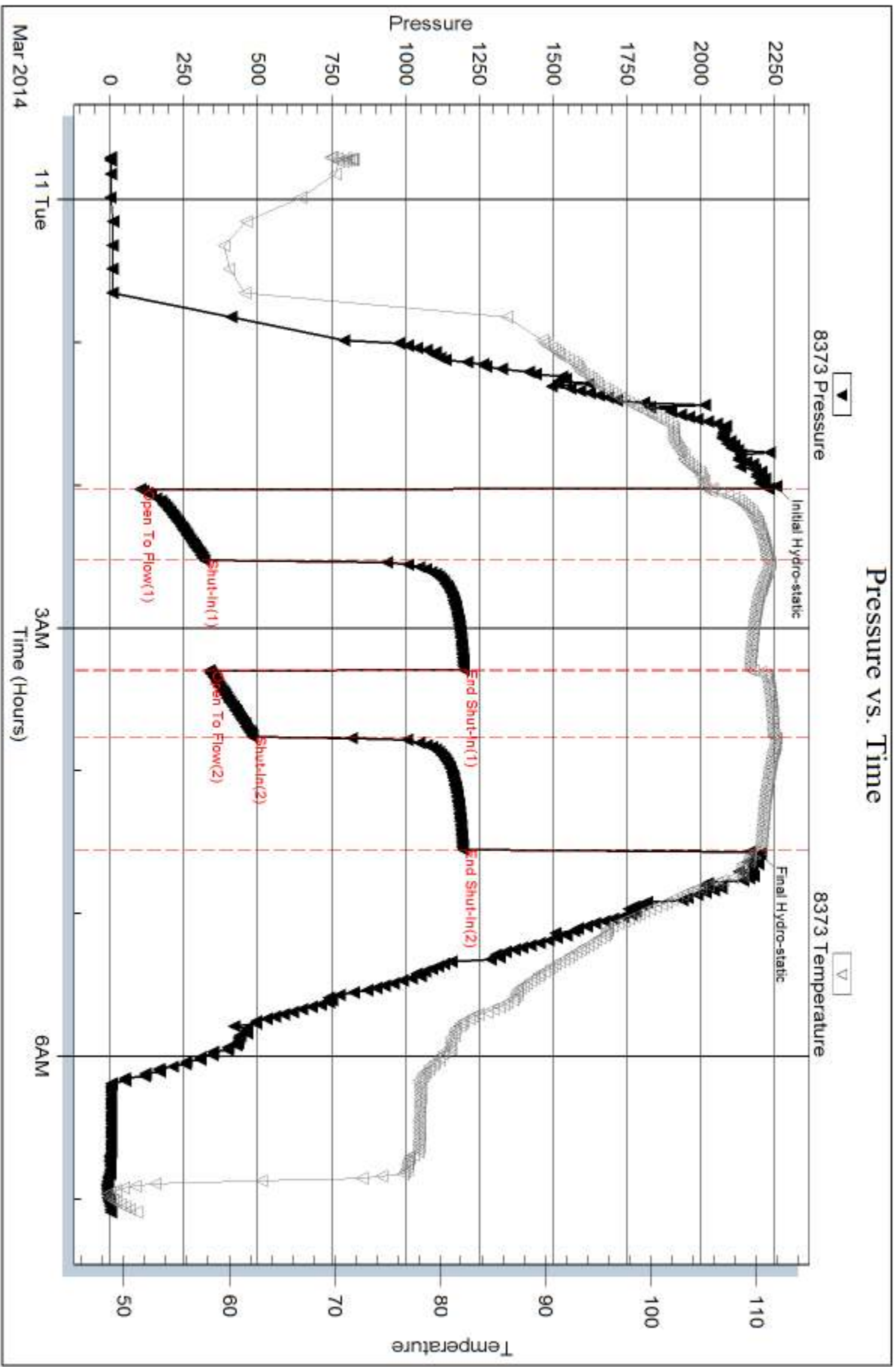
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .16@50=69000

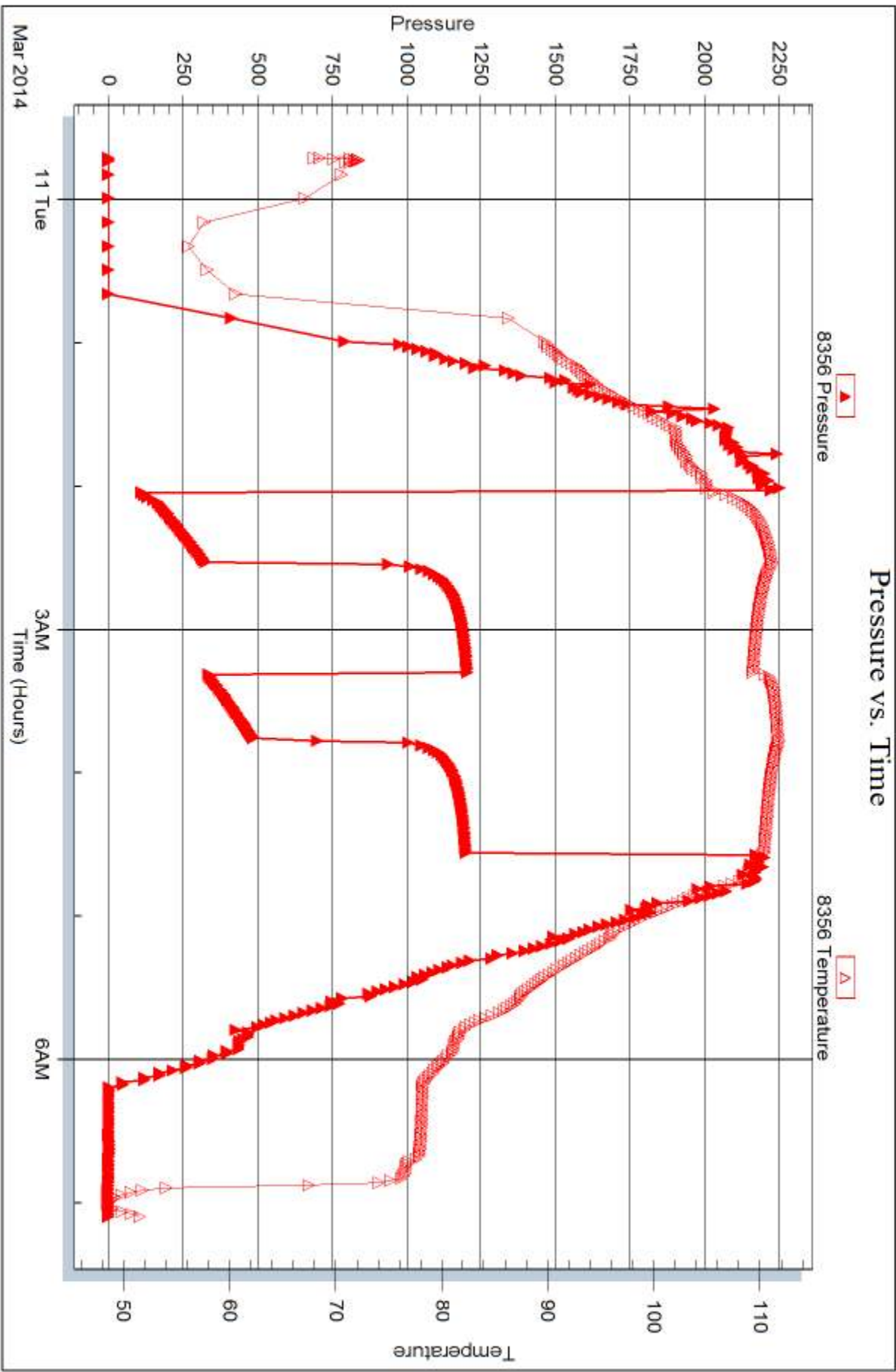


Serial #: 8356

Outside Hartman Oil Company

Calkins #15-1

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 55646

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DRILL STEM TEST REPORT

Prepared For: **Hartman Oil Company**

10500 E Berkeley Sq PKWY Ste 100
Wichita, KS 67206

ATTN: Kitt Noah

Calkins #15-1

15-21s-36w Kearny,KS

Start Date: 2014.03.12 @ 02:32:59

End Date: 2014.03.12 @ 11:04:59

Job Ticket #: 55647 DST #: 2

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.03.19 @ 17:05:21



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Hartman Oil Company
 10500 E Berkeley Sq PKWY Ste 100
 Wichita, KS 67206
 ATTN: Kitt Noah

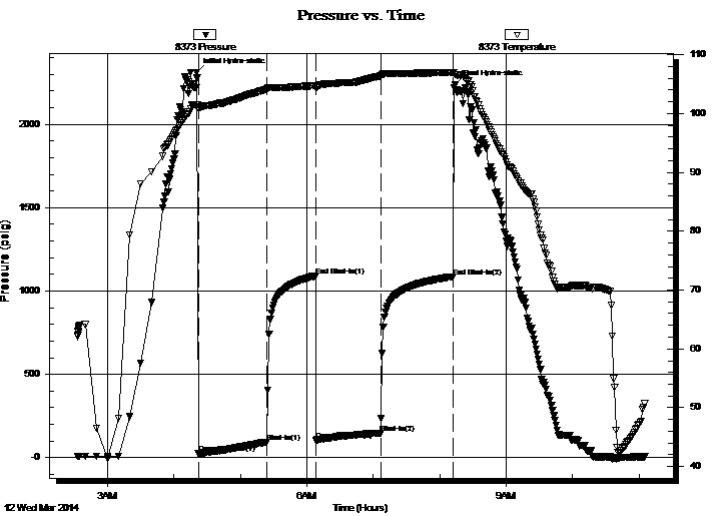
15-21s-36w Kearny, KS
Calkins #15-1
 Job Ticket: 55647 **DST#: 2**
 Test Start: 2014.03.12 @ 02:32:59

GENERAL INFORMATION:

Formation: **Ft Scott**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:21:59
 Time Test Ended: 11:04:59
 Interval: **4618.00 ft (KB) To 4650.00 ft (KB) (TVD)**
 Total Depth: 4650.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brandon Turley
 Unit No: 60
 Reference Elevations: 3232.00 ft (KB)
 3222.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 8373 Inside
 Press@RunDepth: 147.74 psig @ 4619.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.03.12 End Date: 2014.03.12 Last Calib.: 2014.03.12
 Start Time: 02:33:04 End Time: 11:04:58 Time On Btm: 2014.03.12 @ 04:20:29
 Time Off Btm: 2014.03.12 @ 08:13:59

TEST COMMENT: IF: Surface blow built to 4"
 IS: No return.
 FF: Surface blow built to 2"
 FS: No return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2311.24	101.43	Initial Hydro-static
2	24.50	100.83	Open To Flow (1)
64	94.50	104.18	Shut-In(1)
108	1091.41	104.71	End Shut-In(1)
108	106.19	104.35	Open To Flow (2)
166	147.74	106.34	Shut-In(2)
232	1086.00	106.99	End Shut-In(2)
234	2235.62	106.63	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
126.00	mcw 80%w 20%m	0.62
159.00	w cm 20%w 80%m	1.06

* Recovery from multiple tests

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Hartman Oil Company

15-21s-36w Kearny,KS

10500 E Berkeley Sq PKWY Ste 100
Wichita, KS 67206

Calkins #15-1

Job Ticket: 55647

DST#: 2

ATTN: Kitt Noah

Test Start: 2014.03.12 @ 02:32:59

Tool Information

Drill Pipe:	Length: 4351.00 ft	Diameter: 3.80 inches	Volume: 61.03 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 254.00 ft	Diameter: 2.25 inches	Volume: 1.25 bbl	Weight to Pull Loose: 74000.00 lb
			<u>Total Volume: 62.28 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	4618.00 ft			Final 65000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	32.00 ft			
Tool Length:	60.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Stubb	1.00			4591.00	
Shut In Tool	5.00			4596.00	
Hydraulic tool	5.00			4601.00	
Jars	5.00			4606.00	
Safety Joint	3.00			4609.00	
Packer	5.00			4614.00	28.00 Bottom Of Top Packer
Packer	4.00			4618.00	
Stubb	1.00			4619.00	
Recorder	0.00	8373	Inside	4619.00	
Recorder	0.00	8356	Outside	4619.00	
Perforations	26.00			4645.00	
Bullnose	5.00			4650.00	32.00 Bottom Packers & Anchor

Total Tool Length: 60.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Hartman Oil Company

15-21s-36w Kearny,KS

10500 E Berkeley Sq PKWY Ste 100
Wichita, KS 67206

Calkins #15-1

Job Ticket: 55647

DST#: 2

ATTN: Kitt Noah

Test Start: 2014.03.12 @ 02:32:59

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

44000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 79.90 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 4000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
126.00	mcw 80%w 20%m	0.620
159.00	w cm 20%w 80%m	1.064

Total Length: 285.00 ft Total Volume: 1.684 bbl

Num Fluid Samples: 0

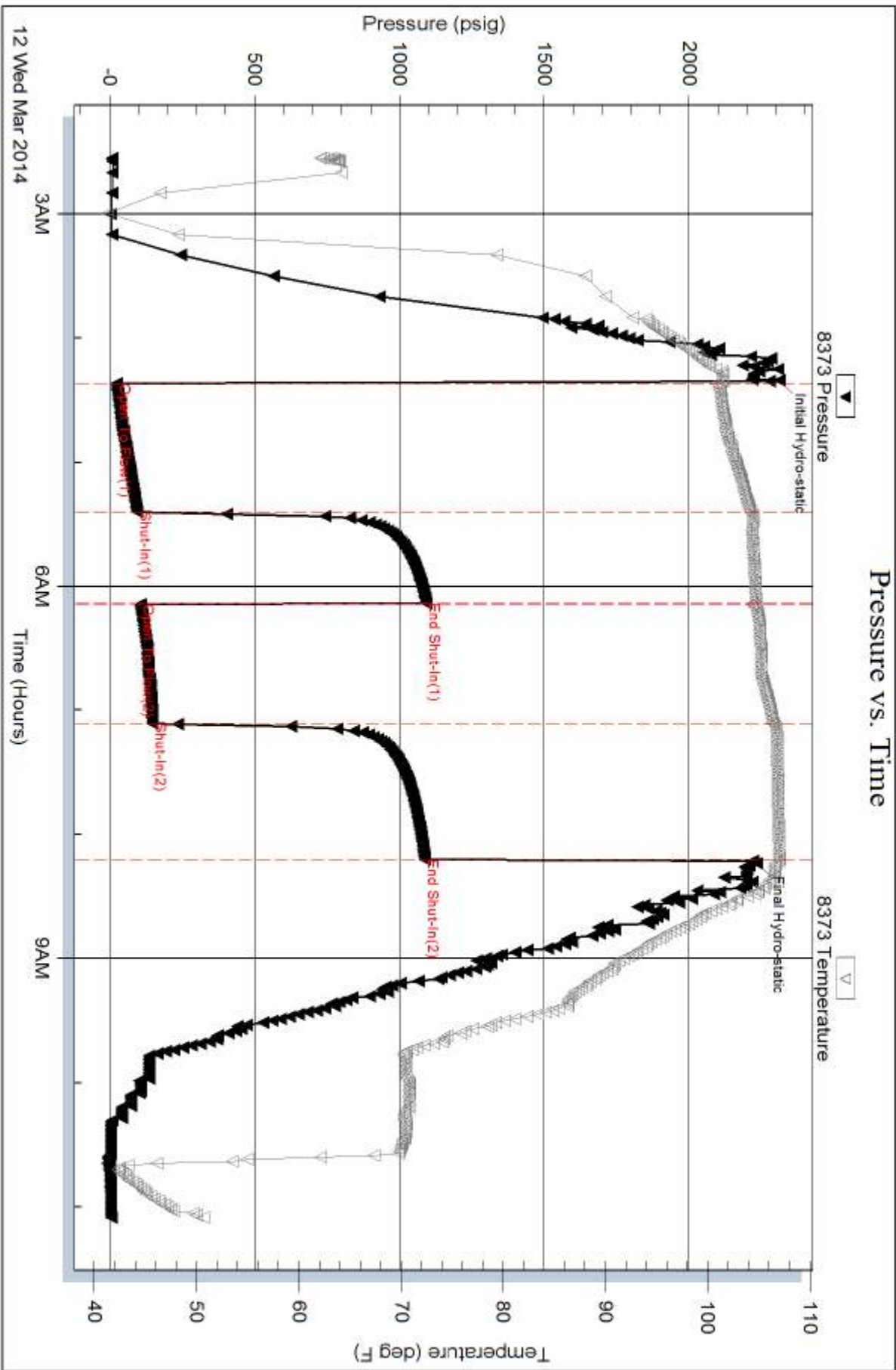
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .25@48=44000

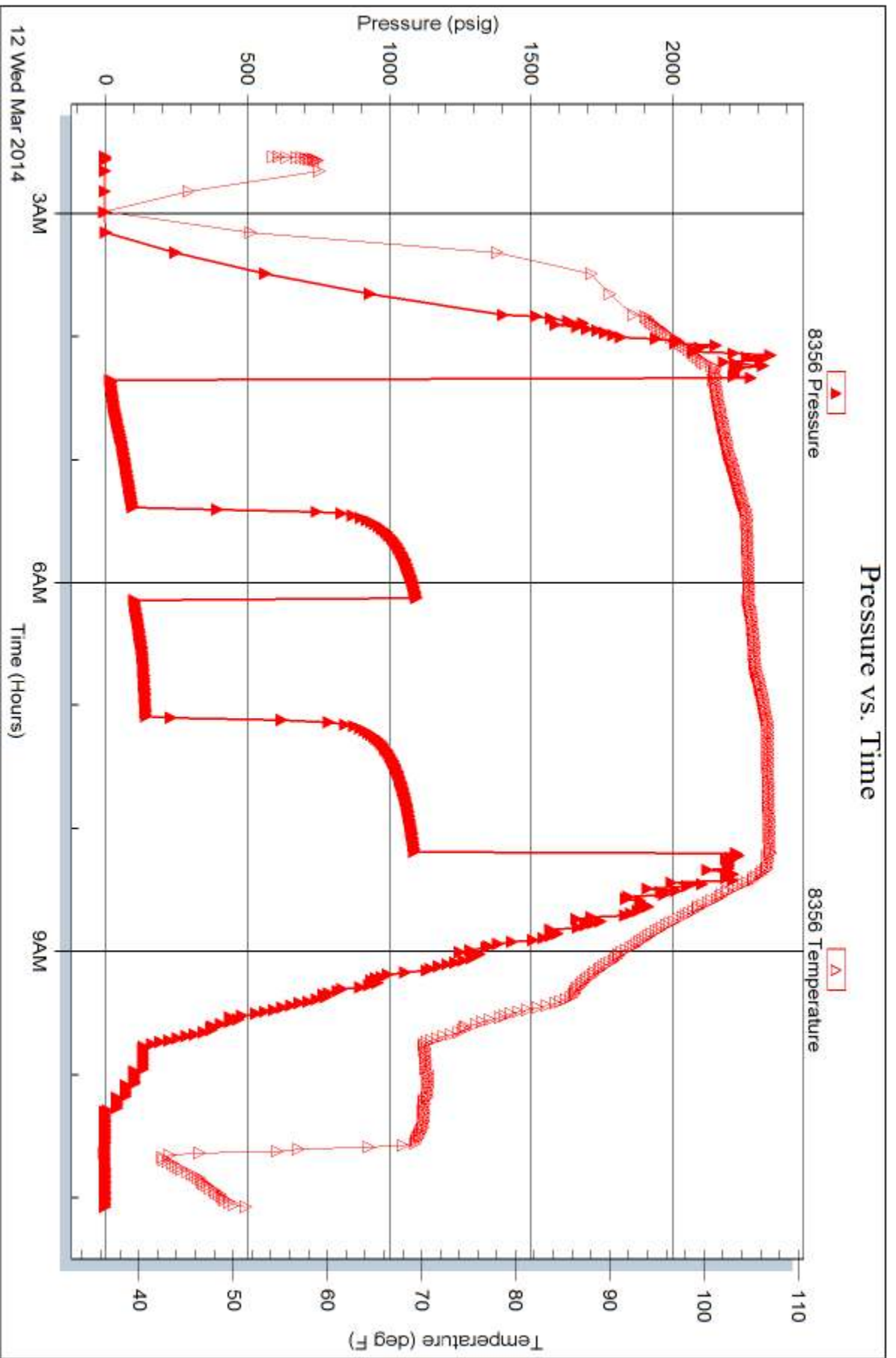


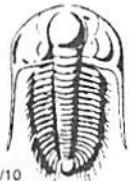
Serial #: 8356

Outside Hartman Oil Company

Calkins #15-1

DST Test Number: 2





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 55646

Well Name & No. Calkins 15-1 Test No. 1 Date 3-16-14
 Company Hartman oil company Elevation 3232 KB 3222 GL
 Address 10500 E Berkeley Sq Pkwy Ste 100 Wichita, KS 67206
 Co. Rep / Geo. Kitt North Rig H2 #2
 Location: Sec. 15 Twp. 21S Rge. 36W Co. Kearny State KS

Interval Tested 4517 4541 Zone Tested Altamont B
 Anchor Length 24 Drill Pipe Run 4255 Mud Wt. 9.3
 Top Packer Depth 4512 Drill Collars Run 254 Vis 58
 Bottom Packer Depth 4517 Wt. Pipe Run — WL 8.0
 Total Depth 4541 Chlorides 3600 ppm System LCM 3

Blow Description IF: BoB in 5 mins.
IS: No return,
EF: BoB in 8 mins,
FS: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>217</u>	<u>mcw</u>		<u>80</u>	<u>20</u>	
<u>744</u>	<u>water</u>		<u>100</u>		

Rec Total 961 BHT 110 Gravity — API RW .16 @ 50° F Chlorides 89,000 ppm

(A) Initial Hydrostatic 2253 Test 1250 T-On Location 19:45
 (B) First Initial Flow 103 Jars 250 T-Started 23:42
 (C) First Final Flow 319 Safety Joint 75 T-Open 2:01
 (D) Initial Shut-In 1198 Circ Sub N/C T-Pulled 4:31
 (E) Second Initial Flow 337 Hourly Standby 1 1/2 T-Out 7:10
 (F) Second Final Flow 483 Mileage 78 - 120.90
 (G) Final Shut-In 1195 Sampler
 (H) Final Hydrostatic 2200 Straddle

Shale Packer
 Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility 150

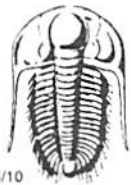
Initial Open 30
 Initial Shut-In 45
 Final Flow 30 45
 Final Shut-In 45

Sub Total 0
 Total 1845.90
 MP/DST Disc't

Sub Total 1845.90

Approved By [Signature] Our Representative [Signature]

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 55647

Well Name & No. Collins 15-1 Test No. 2 Date 3-12-14
 Company Hartman Oil Company Elevation 3232 KB 3222 GL
 Address _____
 Co. Rep / Geo. Kitt North Rig H2 #2
 Location: Sec. 15 Twp. 21S Rge. 36W Co. Kerny State KS

Interval Tested 4618 4650 Zone Tested Ft. Scott
 Anchor Length 32 Drill Pipe Run 4351 Mud Wt. 9.3
 Top Packer Depth 4613 Drill Collars Run 254 Vis 50
 Bottom Packer Depth 4618 Wt. Pipe Run — WL 8.0
 Total Depth 4650 Chlorides 4000 ppm System LCM 2
 Blow Description FF: Surface blow built to 4,
IS: No return.
FF: surface blow built to 2,
IS: No return.

Rec	Feet of	%gas	%oil	%water	%mud
<u>159</u>					
<u>126</u>					

Rec Total 285 BHT 106 Gravity — API RW .25 @ 48 ° F Chlorides 44,000 ppm

(A) Initial Hydrostatic <u>2311</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>1:30</u>
(B) First Initial Flow <u>24</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>2:32</u>
(C) First Final Flow <u>94</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>4:20</u>
(D) Initial Shut-In <u>1091</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIL</u>	T-Pulled <u>8:05</u>
(E) Second Initial Flow <u>106</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>11:00</u>
(F) Second Final Flow <u>147</u>	<input checked="" type="checkbox"/> Mileage <u>78-k2</u> 241.80	Comments <u>load 8:00 pm</u>
(G) Final Shut-In <u>1086</u>	<input type="checkbox"/> Sampler	<u>on the 3-13-14</u>
(H) Final Hydrostatic <u>2235</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>60</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>800</u>
Final Shut-In <u>60</u>	<input checked="" type="checkbox"/> Day Standby <u>1d 9h</u>	Total <u>2766.80</u>
	<input checked="" type="checkbox"/> Accessibility <u>150</u>	MP/DST Disc't _____
	Sub Total <u>1966.80</u>	

Approved By [Signature] Our Representative [Signature]
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